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ABSTRACT

Educational needs of the future must be addressed, even though projecting into the 21st century is difficult. Educators need to envision a better future and believe that people can influence that future and that the potential for world improvement is good. A vision or design for the future requires thinking about long-range possibilities rather than narrow specialties. At present, technology and development allow many to pursue human fulfillment, but the imagination needed to design an education for envisioning wider human fulfillment must come from educational leaders who are futurists themselves. However, a better future is not guaranteed, especially if the good life is defined only in materialistic terms and if there is no stimuulation for conceptualizing life on a higher plane. Future educational aims will have to be based on a wider foundation. They should include learning to learn efficiently (to keep up with changing requirements and jobs), socialization on a broader scale involving more alternatives, value formation, education beyond job training (including continuing education and preparation for leisure), renewed emphasis on general education, development of skills in evaluating ideas and materials, and education for dealing with the unknown, uncertainties, and probabilities. (RW)

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PRIORITIES FOR EDUCATION IN THE INFORMATION AGE:

LIVING WITH COMPUTERS AND LEARNING A LIVING

by

John D. Pulliam

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PRIORITIES FOR EDUCATION IN THE INFORMATION AGE:

LIVING WITH COMPUTERS AND LEARNING A LIVING

Books and articles dealing with educational research often point up major errors such as bad design, improper use of statistics, or poor analysis of data. Often there is a more fundamental difficulty, namely precise solutions are fitted to the wrong problems. There is an analogy between this dilemma in research and policy making in education today. Far too much of the theory is based on assumptions that are part of the industrial era status quo. The value of futurism is that it offers some cues about how to prepare to live in the future, even though the future is unknown.

Education is always influenced by the tremendous momentum of past traditions while institutions like schools resist rapid implementation of innovative ideas. Present trends such as "back to basics," the abandonment of programs for social reconstruction, apathy toward equal educational opportunity, business model accountability, and a narrowing of the curriculum in the name of quality, are efforts to turn back the clock at least twenty years. In the long run, these trends will do little to alter the low state of esteem into which modern public schools have fallen. Nevertheless, these forces now in operation together with massive institutional resistance to change, will certainly shape pedagogical policy through the current decade. By 1990, I believe, it will be painfully apparent that these trends will have failed to meet the needs of the people or to educate adequately for survival.

It is also true that future priorities must of necessity be speculative. We can never actually know the future until it becomes the present and slips

suddenly into the past. It is common knowledge that the rate of change in the industrial world is moving on an exponential curve. What is sometimes overlooked is that social inventions lag far behind careening technology so that the cultural fabric is stretched to the breaking point. It is therefore risky to project cultural change into the remote future. Writers who describe education in the year 2,000, the third millennium, or the middle of the twenty-first century must be so removed from current reality as to deal in fiction. Scenario and science fiction authors who describe life and learning in the far future may serve a useful purpose in stimulating thought, but a span of ten to fifteen years is about as far as we can go in linking present realities with plausible futures. Of course, children now entering kindergarten may be expected to be alive and active in the middle years of the twenty-first century unless our policies totally fail and permit some disaster like global nuclear war. If the next century is as different from the present one as the twentieth century was different from the nineteenth the task of preparation will be of Herculean proportions. At the very least, we must avoid sending people into the twenty-first century armed only with an education which is based on a rear-view mirror image of the nineteenth century.

New possibilities for human achievement occur only when new habits of living and long established traditions are challenged by changing conditions. An education which can prepare for new horizons is realistic if we have the intelligence and the integrity to invent the kind of future that will permit and sustain greater human development. There is truth in the symbolism of old Chinese writing which combined the character meaning danger with the one for opportunity to create the word "crisis."

Also central to the task of producing a better future through

education is faith in ability of individual human action and collective effort to resolve problems and create better opportunity. The ancient Athenians of the age of Pericles believed in the ultimate intelligibility of the universe. They thought the nature of man and of existence itself was knowable, and that understanding natural forces would give them the power to control the world. The decline of the Greek city states in Hellenistic times was marked with an attitude of uncertainity which Gilbert Murray described as "the failure of nerve." Those who set priorities for education in the 1990's and beyond must resist the tendency to think that human action really cannot control the world and the future is beyond the understanding of the human intellect. For educational policy, there can be no failure of nerve. History is shaped by people even in times of deep stress when individuals may feel that they are the pawns of forces beyond their understanding and control. The inability to envision a future better than the present is a failure of the imagination (which must be avoided like the plague).

Of course many futurists take issue with the idea of progress leading to ever greater production of consumer goods, the expenditure of enormous quantities of fossil-based energy, the rapid depletion of non-renewable natural resources, and the development of world-wide markets for materialistic items such as personal automobiles. They say it will be very difficult to maintain peace in the face of local despotism, disregard for human rights, and the arms race between growing numbers of nations with the ability to make nuclear war. The rich-poor gap continues to grow along with vast increases in the populations of nations that are unable to provide even the most basic services or to guarantee freedom from starvation. Fully one third of mankind currently suffers from want, malnutrition,

or insecurity. Obviously, hungry people have no energy for education, fearful people do not seek harmonious personal integration, and the oppressed have little zest for developing their talents. Yet it is true that vast numbers of people have already achieved basic needs for security, freedom from want, and freedom from political oppression.

But even with starvation in parts of the underdeveloped world and recession and unemployment in the United States, the potential for resolving human problems and reaching a higher level of fulfillment has never been greater. A continuation of international strife, apathy toward human misery in remote areas, and even greater materialistic conspicuous consumption in the developed nations is a blueprint for disaster but it is not beyond the capacity of human beings to alter these trends. If they are altered, the opportunity for the future of billions of people is so bright as to stagger the imagination. An excellent case can be made that improving world wide conditions for all people and striving to realize the maximum achievement of human potential in technologically advanced nations, are closely associated goals. A shift of attitude away from exploitation, consumption, competition, and the production of goods might benefit all.

Most Americans already have freedom from want, though not freedom from greed. We have accepted as a realistic goal the idea that ordinary women and men can achieve the good life in materialistic terms. Luxuries beyond the dreams of the most wealthy and powerful kings in history are now within the reach of the most pedestrian citizens.

If we are to seek purposes beyond affluence, values beyond technology, and visions of the good life beyond material prosperity, these purposes, values, and visions must be found in ourselves. Designing a better future requires that we extract ourselves from exclusive concern with the

surrounding environment and think about long-range possibilities. A limited training program only contributes to myopic perception and restriction of our ability to think in terms of fulfilling potentials. It seems quite impossible that a group of narrowly trained specialists will be able to identify viable educational priorities for the 90's and beyond. We know specialization is necessary for the future, but we must also have broad general education with depth and rigor. Marshall McLuhan's argument in Understanding Media is that in education, the conventional division of the curriculum into subjects is already as outdated as the medieval trivium and quadrivium after the Renaissance. Any subject taken in depth at once relates to other subjects.

Throughout history, only a small portion of the population had the wealth and the freedom to pursue human fulfilment. Before the agricultural revolution, there was insufficient food available to free any group from the necessity of devoting their full attention to acquiring the "staff of life." Only modern machines and technology have allowed large numbers of people to pursue the higher goals of human fulfillment. This happy situation does not yet apply to everyone in the highly developed technological nations and certainly not to the third world, but the means to make it a condition enjoyed by all of the planet's people is within our grasp. It is not enough to bring Japanese or American affluence to everyone. What we must do is establish educational priorities based on the premise that a much superior human condition can be achieved.

The utopian imagination required for such a grandiose future is not being provided by educational theorists who focus on preparing children for the life conditions of contemporary society. It can hardly be drawn from philosophers who spend their time on the analysis of language or from

business leaders who only desire a more efficient training system to feed the mills of industrial production. It is unlikely to come from political figures concerned with pleasing voters, from members of the moral majority who want to turn back the clock, or from professional educators who are good only at running systems and managing crises. If these priorities and the utopian vision are to be provided at all, leaders in education who are futurists will have to suggest them.

For all the advancement toward a better society, there have been opposite and often stronger movements toward slavery and exploitation. James Cavell's popular novel Shogun is an excellent description in medieval Japan of the attitude of the nobles and warlords toward their subjects and those who could not defend themselves. The history of Nazi Germany and more recent conditions in Southeast Asia bear witness to the fact that sophisticated technology and scientific invention do not guarantee a utopian future. As Maslow has pointed out, the path toward self-actualization and the highest human achievement begins with satisfying basic needs. But even those who have food, safety, freedom and security will not automatically strive to reach higher goals.

If the good life is defined in materialistic terms only, if values are taken from norms presented through the medium of television, if education is directed toward mere job training, and if no stimulation or support for the conceptualization of life on a higher plane is provided, there is little hope for a better future. Of course it is necessary to solve the basic human problems for all people and to provide training for scientists, engineers, physicians, communications experts, systems theorists, and the like. But these goals, if achieved, merely provide for a continuation of the present industrial era with more equity of

distribution of resources. They do not assure a smooth transition into the post-industrial society, the information age, the era of communication, the learning society.

What kind of future does lie beyond affluence, material prosperity and technological advance? To speak of "human wholeness," a high degree of "personal integration," or "development of the human potential" is to use terms that are vague. Educators used to specific goals expressed in behavio al terms are uncomfortable with such imprecise and general aims as "human fulfillment." Such aims are not quantitative and do not lend themselves to the reductionistic standards of accountability. The focus of the 1980's on basic skills and information is clear and simple. Pathology always being easier than cure, educators are likely to look for the obstacles to fulfillment and self-actualization instead of finding ways to achieve these goals. Certainly the momentum of the industrial, production-oriented, materialistic, job-training, pragmatic educational responses will not be easy to overcome. Yet even the most practical educator who wants to produce students who will be successful workers in the present industrial era is aware that future needs and possibilities may be different. I believe we do not have to be precise about future aims if we build a wide foundation.

Learning to learn efficiently. People throughout the industrial era devoted the early part of their lives to formal education and followed it with a longer period of work and leisure. By 1980, however, it was apparent that learning and working were activities that required a life-long relationship. Highly trained technicians and professionals were required to keep on learning because their skills and knowledge rapidly became obsolete. Most people in the 1980's realized that they would need

to retrain several times to prepare for new jobs of quite a different nature or to keep up with innovations in their fields. Formal education began to blend with informal learning experiences, while specific training for work and general education expanded beyond the years of youth. Teachind and learning are vital in an era when access to unbiased information and knowing how to use it are survival skills. Learning how to learn quickly and efficiently must become a matter of highest priority. Any activity which continues throughout life should be mastered as well as is humanly possible.

Socialization on a broad basis. Traditionally, education has served two distinct functions. One is teaching basic skills, processes, and information necessary to function in the world, providing the foundation for future learning. The other is to pass on the culture to a new generation through socialization and enculturation. The latter function is a means of ensuring the unity and survival of society. It provides patterns of behavior for individuals and groups, teaches mores and rules of behavior, and furnishes models or norms for accepted actions and beliefs. American schools have long been a major institution for perpetuating and maintaining the culture. A future priority must be to broaden socialization to include a wide range of alternatives. If individuals learn to conform to cultural patterns that reflect only a small slice of humanity, they will be ill prepared for a global culture. It is not necessary that socialization be limited to any one single unique pattern or system of values. In a period of accelerating change and the interaction of people with different cultural backgrounds, it is necessary to learn the patterns of behavior of a great many different societies.

Education for value formation. Closely related to the need to widen

the foundation for socialization is the requirement that future education contribute to value formation. Efforts to teach or to clarify values have not always been successful, and there is always the issue of what values should be taught. By 1990, it will be imperative that the process or the way in which values are selected and internalized be well understood by students. This major task cannot be ignored by educators merely because it is difficult or because it promotes controversy.

Education beyond job training. A materialistic society and an industrial-era mind-set have dominated educational policies for many years. School administrators often measured success by the numbers of students who entered the job market or a college which would train them for higher level occupations. Schools were criticized when Johnny could not read well enough to qualify for a position in business and industry, but there was little demand for Johnny to understand his own culture. It was assumed that people would spend a considerable portion of their youth preparing for work, and that formal education would end with the beginning of the work experience.

It is not suggested that work will disappear in the future, but it is suggested that the nature of work will change dramatically. Many occupations will cease to be needed while others will be invented. Rapid advances in science and technology will make it necessary to continue education throughout life in order to keep up with the new developments in each field of labor. Skills and information will become obsolete very quickly. As McLuhan put it, learning a living in the age of cybernation will be a lifelong process. There will be more time to plan, create, design, and modify the environment. True leisure will replace the industrial era concept that time away from work is merely rest and recreation to

prepare for more labor.

Renewal of emphasis on general education. I have found that few upperclassmen in my university classes know about Socrates, and some cannot even place him in history. Quite a few public school teachers have told me that they see no reason for teaching history, literature, basic sciences, or the humanities to students who will be truck drivers, mechanics, or construction workers. Narrow vocational interests have dominated schools to the extent that cultural understanding has been lost or ignored. There has been little concern for broad education that might help workers to be good citizens, creative users of leisure time, community problem solvers, or fulfilled human beings.

Developing skill in evaluation of materials and ideas. Students in the 1990's will regard it as curious that learners in schools once thought that teachers and textbooks were unquestioned authorities. They will learn early to depend on sapiential authority which is Robert Theobald's term for judging knowledge by its use value rather than its origin. An effort will be made to understand that many deeply rooted concepts such as the idea of justice were developed when only a few people had the freedom to pursue their own goals. Such concepts must be re-examined in the light of new social and economic realities. For education to work as an instrument for shaping the future, it will be necessary for everyone to learn how to evaluate the "truth" and the usefulness of ideas, as well as their sources. Literary exercises like checking one account against another and the comparison of various interpretations will be supplemented by computer-based checks of validity. Priority should be given to skill in critical viewing, as well as critical reading and listening. No person in the 1990's will be educated unless she or he has learned to detect subtle psychological

persuasion, false logic, emotional appeals, and similar tricks used to make people believe what is not true. The argument of Postman and Weingartner that all students need a built in "crap detector" will become policy in the 90's.

Education to deal with the unknown. Throughout the history of education, students attended schools to learn what they did not know from teachers who presumed to know. A grave error in traditional education was that it gave insufficient attention to fielding problems for which there was no known answer. While scientific training provided a foundation for discovering or inventing new knowledge, many learners emerged from schools with little skill in inquiry or in probing for new answers. The last decade of the twentieth century must focus on working together to deal with probabilities and uncertainties. Experts may be used to clarify aspects of problems, but many of the most significant human and societal difficulties cannot be resolved by experts alone. Learners need to work with possible alternatives and experiences in synergetic activities. Synergy stresses the way in which each unique event or system affects other events and systems. Students need to think of learning as a technique of cooperative problem-analysis and the sharing of information resources. The delphi method must be practiced and better communication methods must be learned. Such educational activities require that people be willing to make mistakes and risk being wrong. As George Leonard has argued, learning means that the student must be prepared to change and have his or her prejudices altered. Future education will fail unless it moves away from exclusive treatment of what is well understood toward helping students cope with the unknown.

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